trunk is taken as a standard, the same general results are obtained, but the length of the thorax as compared with that of the trunk is greater in the Celts than in the Kymri. A comparison with similar measurements of various races of Tunis, negroes of the Soudan, and a single bushman, leads the author to the conclusion that in any given race all the measures of the body increase in absolute length and diminish in relative length as the stature increases, and *vice versâ*.—In a paper on the Matriarchate in the Caucasus, Maxime Kovalevsky adduces facts which tend to prove that the ancestors of the mountaineers who live in the high valleys of the Caucasus at the present time practised what Morgan and Fison have called "group marriage."—Dr. H. Ten Kate gives an account of his researches in Malaysia and Polynesia during a scientific mission promoted by the Royal Geographical Society of the Netherlands, in the course of which he examined 999 Malaysians of different races, and 314 Polynesians. The predominant colour of the skin among the Malaysians is brown and dark brown, while among the Polynesians it is light brown and yellow. The Malaysians have generally wavy or curly hair, but straight hair is a characteristic of the Polynesians. The Malaysians are mesocephalic; the Polynesians brachycephalic. Among the Malaysians the nose is concave or *retroussé*, while the Polynesian noses are straight and aquiline in about equal proportions. As regards stature, the Malaysians are below middle height and the Polynesians tall.—Dr. P. Topinard gives an interesting account of Anthropology in the United States, where the subject has received so much attention during the last few years. The question of the antiquity of man in North America is discussed at some length, and the general conclusion arrived at is that it does not exceed 15,000 years. Dr. Topinard proposes to continue the examination of American questions in future numbers of *L'Anthropologie*.

Bulletin de l'Académie des Sciences de St. Pétersbourg, New Series, vol. iii. No. 3.—Preliminary report on the results of the archæological expedition to the Orkhon River, by W. Radloff. The ruins of Khara-Calgasun, the old city of the Uigurs, close by which lie the ruins of a palace of the Mongol Khans, have been explored, as also the Tüküe monuments in the valley of Tsaidamin-nor. In the monastery of Erdeni-dsu, about 27 miles south-east of Kosho-tsaidam, and 20 miles south of Khara-balgasun, the expedition has discovered several stones, covered with Mongolian, Tibetan, and Persian inscriptions which, in Prof. Radloff's opinion, prove that the old town of Karakorum stood at this spot. This position would agree with the Chinese indications which give to Karakorum a position of 100 *li* south of Ughei-nor. Many maps, plans, photographs, and casts of inscriptions have been brought in by the expedition.—Reports of MM. Clements, Dudin, Yadrintseff, and Lewin, relative to the same expedition.—Photographic spectrum of Nova Aurigæ, 1892, observed at Pulkova, by A. Belopolsky. Full details of the observations and measurements made on the photographs are given. In his conclusions the author considers an eruption of the star as not probable, and concludes in favour of a superposition of the spectra of two or more bodies in the spectrum of the Nova.—On a group of peculiar rocks brought from the Taimyr-Land by A. Middendorff, by Dr. K. Chrustschoff.—On a new species, *Felis pallida*, from China, by Eug. Büchner. The species is near to *Felis chaus*, Güld., but partially differs in coloration, as also in the length of the tail. The specimens described were brought in by Przewalski in 1884 from the south Tetung ridge in Gan-su.—On the state of the basin of the Black Sea during the Pliocene Age, by N. Andrusoff. The following conclusions are arrived at: The now deep part of the Black Sea remained submerged since the Sarmatian epoch, and was covered with brackish lakes of the Caspian type; however, it was separated from the Mediterranean by a continent which occupied the place of the Archipelago and the Ægean Sea. This continent was submerged, and a communication between the Mediterranean and the Black Sea was established at a very recent epoch, when the Black Sea already had its present shape.—On the differential equation of Lamé-Hermite, by F. Brioschi.—On the Perseids observed in Russia in 1892, by Th. Bredikhin. Observations, with the view of determining the decrease of the inclination of the orbits of the meteors, in proportion to the time-interval from August 10·5, have been made throughout the duration of the shower at Moscow, Pulkova, and a place in the district of Kineshma. All observations, including 339 meteors, are embodied in seven lists, or charts, published in full. The radiant has been deduced from each chart separately, and given for eight different dates, from July 29 to August 29. The surface of radiation has a circular form, its diameter having a length of nearly 45°, and the radiant point really suffered displacement.—On the embryonal development of the birch, preliminary communication, by S. Nawaschin. It has two phases in common with the development of the Casuarinæ, which therefore cannot be separated from other Angiosperms. They are evidently connected, through the birch, with the lower Angiosperms (Apetales).—On the representation of the daily change in the temperature of the air by means of Bessel's interpolation formula, by H. Wild. Critics of conclusions, opposed to those of the author, and arrived at by Dr. Paul Schreiber, director of the Chemnitz Meteorological Institute.

SOCIETIES AND ACADEMIES.

LONDON.

Entomological Society, October 18.—Henry John Elwes, President, in the chair.—Mr. R. Adkin exhibited two *Leucania vitellina* and one *L. extranea*, taken in the Scilly Islands, in August 1893.—Mr. R. South exhibited a specimen of *Polyommatus bœticus*, and a number of varieties of *Chrysophanus phlæas*, captured in Kent, in September last, by Mr. Sabine; also a curious variety of *Argynnis euphrosyne*, taken in Lancashire in May 1893; a pallid variety of *Vanessa urticæ*, taken in Monmouthshire, in July 1893; and a *Triphæna pronuba*, the right wings of which were typical, and the left wings resembled the variety *innuba*, caught at sugar, in Dovedale, Derbyshire, in July 1893.—Mr. G. H. Verrall exhibited a specimen of the Tsetse (*Glossina morsitans*), and also one of the common European allied species (*Stomoxys calcitrans*). He also exhibited a specimen of *Hæmatobia serrata*, Dsv., which hes tated was not uncommon on cattle in England, but believed to be harmless; while in North America the dreaded "horn-fly" is said to be the same species.—Mr. Elwes exhibited a larva which he had found three days previously under stones on a moraine, apparently quite destitute of vegetation, in the Austrian Tyrol, at an elevation of about 7000 feet. He remarked on the number of Alpine butterflies, some of them in fresh condition, which he had seen whilst chamois-hunting in the Austrian Tyrol during the last week, and he suggested that in such a fine autumn as the present one collectors might find more novelties among the larvæ of Alpine species than in the summer.—Col. Swinhoe read a paper entitled "A List of the Lepidoptera of the Khasia Hills" (pt. 2). The President said he thought all entomologists would be grateful to Col. Swinhoe, Mr. Hampson, Mr. Meyrick, and others for the work they had recently been doing in describing the moths of India; but as the district of the Khasia Hills was probably richer in species than any other part of India, except Sikkim, and new species were being received almost daily, it was impossible to make any list complete. Mr. Jacoby, Mr. McLachlan, Mr. Jenner Weir, and Col. Swinhoe continued the discussion.—Mr. E. Meyrick communicated a paper entitled "On a Collection of Lepidoptera from Upper Burma." The author stated that the species enumerated in the paper were collected by Surgeon-Captain Manders whilst on active service in the Shan States and their neighbourhood, shortly after the British annexation of the territory. A discussion followed, in which the President, Surgeon-Captain Manders, and Col. Swinhoe took part.

PARIS.

Academy of Sciences, October 23.—M. de Lacaze-Duthiers in the chair.—Observations of Brooks' Comet (1893, October 16), made at the great equatorial of the Bordeaux Observatory, by MM. G. Rayet and L. Picard.—On the movements of the surface of the heart, by M. Potain. The object of this investigation was to obtain the interpretation of the cardio-pulmonary sounds resulting from the movements communicated to the lung by the heart, and the local inspiration phenomena produced by these movements. The movements were recorded by an instrument capable of tracing simultaneously at several points of the surface the displacements in all directions. From these traces the actual trajectories of the points were constructed, the points being five taken on the accessible surface of the ventricle of an animal with an open chest. The general movement thus indicated is, during systole, a rapid retreat of the surface and an equally rapid translation to the right; this is, in fact, the well-known torsional motion. At the end of the ventricle, the retreat is only effected towards the end of the systole. At the beginning

of diastole, the whole wall rapidly collapses; it then rises, slowly at first, as the blood gradually enters the ventricle, and then rapidly, when the systole of the auricle takes place. On comparing these trajectories with the sounds heard in man and sometimes also in animals, it is found that their amplitude is greatest where these sounds are most intense and frequent, that their direction is that calculated to produce upon the lung a rapid aspiration during systole, and that the rhythm of the sound is itself in correspondence with the variations of speed of the movement. The relation thus discovered solves a complex problem of auscultation.—Observations of the new comet Brooks (1893, October 16), made at the Paris Observatory (west equatorial), by M. G. Bigourdan.—On certain families of gauche cubics, by M. Lelieuvre.—On the kinetic interpretation of the function of dissipation, by M. Ladislas Natanson.—Determination of the velocity of propagation of an electric disturbance along a copper wire, by means of a method independent of any theory, by M. R. Blondlot.—Analysis of a vanadiferous oil, by M. A. Mourlot. This oil, of slight density varying between 1·15 and 1·20, is of a fatty appearance, and contains 51·52 per cent. of volatile matter. The percentage of hydrogen is much lower than that of the vanadiferous oil recently discovered in Argentina by Mr. Kyle, and carbon and nitrogen show a larger percentage. The most interesting feature of this oil is the presence, in the ashes, of a large proportion of vanadic acid in the shape of alkaline and metallic vanadates. It also occurs free in this oil, and may be extracted by washing with ammoniacal water. A quantitative analysis gave a percentage of 0·24 of vanadic acid in the oil, and 38·5 per cent. in the ashes. As the oil is abundant, some important applications of vanadium may be looked for if the properties of the metal are found to be commercially valuable.—On the perfume of the violet, by MM. Ferd. Tiemann and P. Krüger. This is an account of the success so far obtained in the analysis of the perfume-oil contained in the fresh flower of the violet or the dry root of the iris, and its synthesis from lemon-juice.—New synthesis of erythrite, and synthesis of an isomeric erythrite, by M. G. Griner.—Influence of organic solvents upon rotatory power, by M. P. Freundler.—On certain chemical conditions of the activity of brewers' yeast, by M. J. Effront. It was found by a series of experiments that various kinds of yeast, after treatment with gradually increasing quantities of ammonium fluoride, acquired a very considerable fermenting power, estimated at about ten times that developed before this treatment. It also imparted properties which some physiologists had up to now considered as the privilege of certain species.—On the propagation of the *Pourridié de la Vigne* by slips and graft-slips placed in sand "in stratification," by M. A. Prunet. The storage of grafting slips in moist sand for the next season encourages the growth of small fungi upon them, which give rise to a fatal disease of the vine.—On a dislocation in the shape of a mushroom in the Alps of Haute-Savoie, by M. Maurice Lugeon.—On a halo observed at Créteil, on October 22, 1893, by M. Georges Pouchet.

GÖTTINGEN.

Royal Society of Sciences.—The following papers of scientific interest appear in the *Nachrichten* of July to September 1893:—

July 26.—E. Ehlers: On the morphology of the Bryozoa. W. Nernst: Dielectric coefficients and chemical equilibrium. W. Holtz: On direct impressions of magnitude in artificially induced optical illusions. W. C. Röntgen: On the influence of pressure on the electric conductivity of electrolytes.

August 2.—O. Wallach: On compounds of the camphor series. W. Voigt: Observations on rigidity under homogeneous deformation. Also, on an apparently necessary extension of the theory of elasticity. W. Meyer: G. F. Grotefend's first announcement of his decipherment of the cuneiform character.

AMSTERDAM.

Academy of Sciences, September 30.—Prof. van de Sande Bakhuysen in the chair.—Mr. Bakhuis Roozeboom described the method for the determination of oxygen dissolved in water studied by Dr. Romyn. This method unites simplicity and accuracy, and can be executed outside the laboratory. Its use in hygiene was indicated by two series of researches, the first aiming at the determination of the quantity of pure water necessary to improve that of the canals of Leyden, whilst the other concerned the analysis of the oxygen in different parts of the water-conducts in Arnhem, in view of the corrosion of the iron tubes.—Prof. Schoute treated on sections and projections of tessaract and hexadecatessaract.—Prof. Korteweg dealt with the classification of the curves of the third class or the third order, and a graphical representation of the totality of these curves and their division in three tribes by the points of a plane, every point representing all the projective and reciprocal transformations of the same curve.

Netherland Zoological Society, September 30.—M. Hubrecht in the chair.—M. van Wyhe contributed a paper on the ventral nerves (ventral roots) of Amphioxus. With the help of Golgi's method the author was able to state that the ventral nerves are furnished with true terminal organs, Retzius not having succeeded to observe them. The author then discussed the question as to why the ventral part of the motor nerves lies within the myotome, and not, as with the dorsal part is the case, at its medial side. Finally, the same author pointed out that in Amphioxus the ventral nerves contain sensory nerves also.—M. J. T. Oudemans exhibited specimens of *Alytes obstetricans*, taken by him for the first time in the Netherlands, viz. near Valkenburg (Limburg).—M. Horst exhibited a new gigantic European earthworm, obtained near Arcachon (France), and which he referred to a new species (*Allolobophora Savignyi*). The same author observed the larva of a dipterous insect within the mouth of a Perichæta from Java.—M. Hoek made remarks on the spawning of the Anchovy in the Zuiderzee. Another communication from the same author contained an account of trawling experiments in the North Sea.

CONTENTS.